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SERIAL NUMBER	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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07/551,627 08/02/90 MACKINLAY

J 1-90290

EXAMINER

SMITH, M

ART UNIT

PAPER NUMBER

2001

7

DATE MAILED: 08/12/92

RONALD ZIBELLI
XEROX CORP.
XEROX SQ. 020
ROCHESTER, NY 14644

This is a communication from the examiner in charge of your application.
COMMISSIONER OF PATENTS AND TRADEMARKS

☒ This application has been examined ☐ Responsive to communication filed on _____ ☐ This action is made final.

A shortened statutory period for response to this action is set to expire 3 month(s), _____ days from the date of this letter.
Failure to respond within the period for response will cause the application to become abandoned. 35 U.S.C. 133

Part I THE FOLLOWING ATTACHMENT(S) ARE PART OF THIS ACTION:

- | | |
|--|--|
| 1. <input checked="" type="checkbox"/> Notice of References Cited by Examiner, PTO-892. | 2. <input checked="" type="checkbox"/> Notice re Patent Drawing, PTO-948. |
| 3. <input checked="" type="checkbox"/> Notice of Art Cited by Applicant, PTO-1449. (6 sheets) | 4. <input type="checkbox"/> Notice of Informal Patent Application, Form PTO-152. |
| 5. <input checked="" type="checkbox"/> Information on How to Effect Drawing Changes, PTO-1474. | 6. <input type="checkbox"/> _____ |

Part II SUMMARY OF ACTION

1. ☒ Claims 1-62 are pending in the application.
Of the above, claims _____ are withdrawn from consideration.
2. ☐ Claims _____ have been cancelled.
3. ☐ Claims _____ are allowed.
4. ☒ Claims 1-62 are rejected.
5. ☐ Claims _____ are objected to.
6. ☐ Claims _____ are subject to restriction or election requirement.
7. ☒ This application has been filed with informal drawings under 37 C.F.R. 1.85 which are acceptable for examination purposes.
8. ☐ Formal drawings are required in response to this Office action.
9. ☐ The corrected or substitute drawings have been received on _____. Under 37 C.F.R. 1.84 these drawings are ☐ acceptable ☐ not acceptable (see explanation or Notice re Patent Drawing, PTO-948).
10. ☐ The proposed additional or substitute sheet(s) of drawings, filed on _____ has (have) been ☐ approved by the examiner. ☐ disapproved by the examiner (see explanation).
11. ☐ The proposed drawing correction, filed on _____, has been ☐ approved ☐ disapproved (see explanation).
12. ☐ Acknowledgment is made of the claim for priority under U.S.C. 119. The certified copy has ☐ been received ☐ not been received
☐ been filed in parent application, serial no. _____; filed on _____
13. ☐ Since this application appears to be in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11; 453 O.G. 213.
14. ☐ Other

EXAMINER'S ACTION

Art Unit 2301

1. The copending applications listed in the Information

✓ Disclosure Statements should be listed in the Specification with their updated status if they are to be used as references,

2. This application has been filed with informal drawings which are acceptable for examination purposes only. Formal drawings will be required when the application is allowed.

✓ 3. The drawings are objected to under 37 C.F.R. § 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the asymptotic line from claims 14 and 48 must be shown or the feature cancelled from the claim. No new matter should be entered.

4. Applicant is reminded of the proper language and format of
✓ an Abstract of the Disclosure.

✓ The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 250 words. It is important that the abstract not exceed 250 words in length since the space provided for the abstract on the computer tape used by the printer is limited.

✓ 5. The applicant should provide the examiner with the serial numbers and present status of the copending application listed on page 31, line 15 of the Specification.

6. Claims 10-27, and 42-51 are rejected under 35 U.S.C. § 112,

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second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

- the phrase "second region being perceptible as a displaced continuation of the first region" is vague and indefinite because it is unclear whether it is a continuation of its relative place on the surface or on its relative place on the display (claim 10, line 4).
- the method comprising a sequence of steps, each step comprising substeps is vague and indefinite because it is unclear what the steps or sequence of steps are (claims 11, 42, 46 and 48).
- the term "next preceding step" is vague and indefinite (claims 11, 13, 16, 17, 19, 20, 23-26, 42-44 and 46-49).

Dependent claims 12, 14, 15, 18, 21, 22, 27, 45, 50 and 51 are rejected for fully incorporating the deficiencies of their base claims.

7. The following is a quotation of 35 U.S.C. § 103 which forms the basis for all obviousness rejections set forth in this Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary

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skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Subject matter developed by another person, which qualifies as prior art only under subsection (f) or (g) of section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person.

8. Claims 1-5, 10-13, 14-23, 25-34, 37 and 42-62 are rejected under 35 U.S.C. § 103 as being unpatentable over Waller in view of Cawley.

Giving the claims 11-27 and 42-51 the broadest interpretation possible given the vague and indefinite status, see above, the claims are considered to be unpatentable.

As per claim 1, Waller teaches presenting a first image on a display (a viewing space from which the object may be viewed) (col 15, lines 49-59). Waller implicitly teaches storing viewpoint data in three-dimensional workspace. Waller teaches a second three-dimensional coordinate space as a viewing space (col 15, lines 54 and 55). The storing of a first viewpoint is implied because this coordinate space is used in storing panning information (Figure 1, col 15, lines 60-61). Waller teaches a motion requesting signal (inputting and storing further information including panning information...moving the viewing space to the specified position in response to the panning information) (Figures 2 and 3; col 15, lines 60-68; col 16, lines

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1 and 2). Waller teaches presenting a second image on the display (displaying a two-dimensional image of the transformed coordinates, providing a view of the object from the panned-to-position) (Figure 3; col 16, lines 3-5). It is noted, however, Waller fails to teach receiving a region indicating signal from the user input device. Cawley teaches a user operable identifying means for identifying at least one surface point (Figure 4; col 11, lines 61 and 62). It would have been obvious to one of ordinary skill in the art at time of invention to be able select a region of an object as Cawley teaches in order to enable the user of Waller's invention more flexibility in image panning.

Claims 11, 28, 42, 46, and 52 correspond to claim 1 and therefore is rejected under a corresponding rational.

Claim 48 corresponds to claim 1 and therefore is rejected under a corresponding rational and in addition the respective displacements define an asymptotic path is an improvement of a mathematical interpretation which would be a routine optimization and obvious to one of ordinary skill in the art at the time of invention.

As per claims 2, 10, 12 and 54, Waller teaches a first region indicating signal indicating a point on the surface (user gives command to terminal to set an initial viewing transform and an initial value for view motion center (51)) (Figures 2 and 4).

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As per claims 3, 4, 13, 17, 29, 30, 56, and 57 Waller teaches a second viewpoint that is perceptible as positioned at a second distance from the first region, the second distance being shorter or longer than the first distance (a zoom feature is provided so that the display may be magnified as desired) (col 1, lines 54 and 55).

As per claims 5, 20, 34, 43, 44 and 58, Waller fails to teach the first surface as having a normal. Cawley the unit vector NP which is normal to the facet at the point P (Figures 5 and 6, col 6, lines 62-67). Cawley implicitly teaches a second viewpoint being closer to the normal than the first viewpoint. Cawley teaches a floating viewpoint control system (9) with position of viewpoint determined by the user (Figure 1, col 5, lines 64-68). This implies a possible selection anywhere in the three-dimensional space for example closer to the normal.

As per claims 14, 15, 18, 19, 21, 22, 23, 31, 32, 45, 47, 50, and 51, improvements of a mathematical interpretation such as this would be a routine optimization and obvious to one of ordinary skill in the art at the time of invention.

Claims 16, 25, 26, 27, 49, and 53, correspond to claim 1 and therefore are rejected under a corresponding rational.

As per claim 33, Waller teaches the first distance being a distance between the first viewpoint and the point (VMR) (Figure 2).

As per claims 37 and 55, Waller implicitly teaches the line is a chord. Waller teaches radial viewpoint locations (Figure 2) which is an obvious variation to a straight line or chord.

Apparatus claim 59 corresponds to Method claim 1 and therefore is rejected under a corresponding rational.

As per claims 60-62, Waller teaches a user interface device as being a keyboard (Figure 1). It is common knowledge to use a mouse as a user interface tool and to apply various functions to the keys of the keyboard.

9. Claims 6-9, 24, 35, 36, 38, 39, 40, and 41 are rejected under 35 U.S.C. § 103 as being unpatentable over Waller and Cawley in further view of Ware et al.

As per claims 6, 9, 24, 38, 41, Waller fails to teach directions of orientation of the viewpoints; the second direction of orientation being shifted toward the first region from the first direction of orientation. Cawley teaches a user operable identifying means for identifying at least one surface point (Figure 4; col 11, lines 61 and 62) and Ware teaches different directions of orientation of different viewpoints; eyeball in hand (page 177). It would have been obvious to one of ordinary skill in the art at the time of invention to understand and use Ware's eyeball in hand teaching in order to achieve a viewpoint that is optimum with regards to the selected object to be viewed

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(ie. one that brings the identified surface point closer to the center of view).

As per claims 7, 8, 35, 36, 39, 40, Waller teaches the second viewpoint being closer to the normal by an arc length and the direction of orientation being shifted by a shift angle (the viewing space being movable at a selected radial distance around a selected reference point in the modeling space) (Figures 2 and 3; col 15, lines 54-59).

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Canfield et al teaches a video processing system that pans and magnifies portions of the source image with viewer control circuitry generates center coordinates of the portion of the image to be displayed (abstract).

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Smith whose telephone number is (703) 308-0701.

12. Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0754.

MSS

MSS
August 8, 1992

Heather R. Herndon
HEATHER R. HERNDON
EXAMINER
ART UNIT 231